IMPACT OF LEVERAGE ON PROFITABILITY: A STUDY OF INDIAN POWER SECTOR COMPANIES

SYNOPSIS

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SUBMITTED BY

PRAVEEN KUMAR DINKAR

UNDER SUPERVISION OF

DR. BHAWNA JOHRI
ASST. PROFESSOR
FACULTY OF COMMERCE

DEPARTMENT OF APPLIED BUSINESS ECONOMICS, FACULTY OF COMMERCE

DAYALBAGH EDUCATIONAL INSTITUTE (DEEMED TO BE UNIVERSITY)

DAYALBAGH, AGRA- 282005

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1. INTRODUCTION

Finance plays a backbone role in business. Without finance, the business cannot survive. The word finance is derived from The Latin word "Finis" and the old French word "fin" which means end. In the 18th Century English adapted it to mean "management of Money". Finance can also be interpreted in many ways such as fund, money, investment, capital, amount, etc. According to the Oxford dictionary finance is the Management of money. Finance also refers to the science that describes the management, creation, and study of money, banking, credit, investment, Assets, and Liabilities. It consists of financial systems which include public, private, and Government Bodies, and the study of finance and financial instruments which can relate to countries' assets and liabilities.

In 2012 Khan and Jain said that finance is the art and science of managing money. Finance is required to purchase expensive machinery to maintain day-to-day expenses and various other expenditures like Raw materials, labor, and operational and administrative activities these are the activities that require finance for the smooth conduct of business.

Until the year 1890 financial management was a branch of economics Even today it highly depends on the economy. Finance is one of the four important functional areas of the process of management as expressed by Sharma in 2015. In simple words, financial management means rising adequate funds at the minimum cost and utilizing them effectively in business.

1.1 BACKGROUND OF THE STUDY

Every firm needs to determine its capital structure. The proper mix of debt and equity always gives economic benefits to the company. The capital structure mix affects the decision-making of the firm. Firms use either Debt or owner capital to finance a firm. There are three types of leverage

1. Operating Leverage 2. Financial Leverage 3. Combined Leverage.

1.2 Operating leverage

Operating leverage is the ratio of a company's fixed costs to its total costs is known as operating leverage. Variable costs change when production rates change while fixed costs are constant throughout time. For example, rent and property taxes are fixed costs because a company needs to pay the same amount each period, regardless of production levels. An example of a variable cost would be a sales commission Sales increase when an employee sells more products, and as costs rise

for the business as his commission also increases with the sale. The sum of all fixed and variable costs is the total cost.

Operating Leverage can be calculated by using Following Formula

$$\textbf{Operating Leverage} = \frac{C}{EBIT}$$

Or

$$\textbf{Operating Leverage} = \frac{C}{Operating\ Profit}$$

1.2.1 Use of operating leverage

The operating leverage indicates the impact of change in sales on operating income. If a firm has a high degree of operating leverage, a small change in sales will make a large effect on operating income. In other words, the operating profit of such a firm will increase at a faster rate than the increase in sales. Similarly, the operating profit of such a firm will suffer a greater loss as compared to the reduction in its sales. In practice, the company does not like to operate under the condition of a high degree of operating leverage. It is a very risky situation where a small drop in sales can be excessively damaging to the firm's effort to achieve profitability.

Financial Leverage refers to the application of debt financing and borrowed capital as an attempt to increase a firm's operation and profitability. Financial Leverage is majorly measured by expressing long-term liabilities to the equity of a firm. A firm is considered to be leveraged when a firm is partially financed by both debt and equity. Many companies use debt to leverage their profit and capital it can be explained as when a firm increases its debt level the financial leverage level increases. Financial performance refers to a firm's ability to achieve its financial goals and objectives (Yahaya and Lamidi 2015) Kajirwa(2015) deducted that a firm's financial performance depends on the firm's assets utilization in carrying out its income generated in business activities.

The main objective of financial management is structuring the company's capital structure component in a manner that ensures the maximization of shareholders' wealth as it is the key measure to evaluate management performance.

In the words of S.C. Kuchal financial management deals with the procurement of funds and their effective utilization in the business and Solomon describes financial management as concerned with the efficient use of an important economic resource namely capital fund.

1.3Financial Leverage

The use of assets/funding sources for which the organization pays a fixed cost/fixed return is referred to as leverage. The examination included both operational and financial leverage. Financial leverage is a tool for determining a firm's risk. Financial leverage refers to the use of debt components in Capital Structure and the effect of payment of fixed interest on a firm’s profitability. In simple words the amount of money borrowed to complete a transaction is referred to as "financial leverage." It denotes the link between a company's earnings before interest and taxes, also known as Operating profit, and earnings accessible to equity shareholders.

Long-term debt bonds and debentures are included in these types of sources, where long-term loans or debentures includes set rate of interest, which is a larger risk for the corporation or share company. In general, financial leverage is produced by fixed financial costs, such as interest.

1.3.1 Uses of Financial Leverage

The relationship between EBIT and EPS can be examined using financial leverage which can be expressed as the proportion change in taxable income to the percentage change in EBIT. It identifies the Company's most productive capital structure. Financial leverage is an important tool for calculating the fixed cost ratio with the company's total capital. If the firm pays a greater price for fixed-income funds, the earnings from those assets earning per share and return on equity capital will decline.

1.4 Combined Leverage

Operating leverage measures the percentage change in operating profit due to a percentage change in sales. It explains the degree of operating risk. Financial leverage measures the percentage change in taxable profit on account of the percentage change in operating profit. Thus it explains the degree of financial risk. Both these leverages are closely concerned with the firm's capacity to meet its fixed costs. In case both leverages are combined, the result obtained will disclose the effect of a change in sales over a change in taxable profit. In short, composite leverage expresses the relationship between revenue on account of sales and taxable income. It helps in finding out the resulting percentage change in taxable income on account of a change in sales.

Combine leverage Formula:

$$\text{Combine Leverage} = \frac{C}{OP} * \frac{OP}{PBT} = \frac{C}{PBT}$$

C= CONTRIBUTION

OP = OPERATING PROFIT OR EARNING BEFORE INTEREST AND TAX

PBT = PROFIT BEFORE TAX BUT AFTER INTEREST.

1.5Profitability

Profitability refers to an organization's, companies, firms, or enterprise's ability to profit from all of its business activities. Profitability is the most critical factor in the survival and success of any business, and it is difficult to overstate its importance. It can be described as an investment's ability to generate a profit from its use.

1.5.1 Factors affecting Profitability

Cost control: Expenditure in an enterprise's many operating sectors may be examined using an appropriate cost accounting system, allowing the finance management to bring expenditures under control.

Pricing: Pricing is extremely important in terms of the company's marketing effort, image, and sales level. The creation of price strategies should result in profitability while, of course, maintaining the organization's image.

Forecasting Future Profits: Profits are forecasted and analyzed. Profit levels must be forecasted regularly to strengthen the organization.

Measuring Cost of Capital: Each source of money has a distinct cost of capital, which must be assessed since the cost of capital is related to an enterprise's profitability. (The Institute of Cost and Works Accountants of India, 2010)

The profitability of power sector companies in India has been a subject of significant research and analysis. Recent studies have developed into the dynamics of this sector, examining the factors that influence the profitability of Indian power companies.

Singh, A., Gupta, R., and 2022 Indian power industry businesses' profitability analysis: a comparative research study115, 106720 Energy Economics By examining their financial accounts and performance metrics, the enterprises in the Indian power sector are examined to determine their

profitability. It investigates how different elements, like the price of gasoline, governmental regulations, and market rivalry, affect business profitability.

S. Mishra and R. Verma (2023) Profitability factors for Indian power-producing firms, 13(2), 125–136, International Journal of Energy Economics and Policy This study looks at capacity utilisation, technological adoption, and government backing, as well as other aspects, to determine the profitability of Indian power-producing businesses. The study offers perceptions on the tactics that support increased profitability in the power generation industry.

Jain, R., Sharma, P., and 2023 Performance and profitability metrics for Indian enterprises using renewable energy Reviews of Renewable and Sustainable Energy, 155, 11247 This study analyses the financial performance and profitability of Indian renewable energy enterprises. It evaluates the effects of variables including governmental regulations, project costs, and consumer demand on the financial performance of renewable energy providers in the Indian power industry.

Patel, R., Khan, F., and 2022 Power distribution firms in India are profitable and effective. 113905 Energy Policy, 161. The profitability and effectiveness of India's electricity distribution firms are investigated in this study. It looks into the impact of elements on the financial performance and profitability of electricity distribution companies, including technical losses, regulatory frameworks, and customer pricing.

1.6 Power Sector

Power is one of the most critical components of infrastructure, crucial for nations' economic growth and welfare. The existence and development of adequate power infrastructure are essential for the sustained growth of the Indian economy. The basic principle of India’s power industry has been to give universal access to affordable power in a sustainable way. The Ministry of Power has made significant efforts over the past few years to turn the country from one with a power deficit to one with a surplus by establishing a single national grid, fortifying the distribution network, and attaining universal household electrification. With India looking at rapid industrialisation and urbanisation over the next tricenarian, the demand for power in the country is going to rise. The power generation situation in the country has upgraded in the last few years. In June 2017, the Minister of Power announced that India has become a power surplus country, with no shortage of electricity or coal.

As it is well known that India is a major force in the global Energy economy Since 2000 energy consumption has increased more than double and is soon to be the world's largest in consumption Near universal Household access to electricity was achieved in 2019 meaning that over 900 million citizens have gained an electricity connection in less than two decades. India's continued industrialization and urbanization will make huge demand for its energy sector.

The Covid-19 pandemic has disrupted India's energy use; our updated assessment shows an estimated fall of around 5% in the country's energy demand in 2020 due to lockdowns and related restrictions, with coal and oil use suffering the biggest falls. The pandemic has also hit investment in the energy sector, which fell by an estimated fifteen percent in 2020, exacerbating financial strains across the board, in particular among India's electricity distribution companies. How long the impacts last will depend on how quickly the spread of the virus is brought under control, and on the policy responses and recovery strategies that are put in place.

Over 80% of India's energy needs are met by three fuels coal, oil, and solid biomass. Coal has underpinned the expansion of electricity generation and industry, and remains the largest single fuel in the energy mix. Oil consumption and imports have grown rapidly on account of rising vehicle ownership and road transport use. Biomass, primarily fuel wood, makes up a declining share of the energy mix but is still widely used as a cooking fuel. Despite recent success in expanding coverage of LPG in rural areas, 660 million Indians have not fully switched to modern, clean cooking fuels or technologies. Natural gas and modern renewable sources of energy have started to gain ground and were least affected by the effects of the Covid-19 pandemic in 2020. The rise of solar PV in particular has been spectacular; the resource potential is huge, ambitions are high, and policy support and technology cost reductions have quickly made it the cheapest option for new power generation

India was ranked 4th in wind power, 5th in solar power, and 4th in renewable power installed capacity, as of 2020. India is the only country among the G20 nations that are on track to achieve the targets under the Paris Agreement.

2. Review of Literatures

2.1 Review Related To Leverage

In order to determine the impact of financial, operating, and combined leverage on the profitability of

20 companies listed on the Pakistan Stock Exchange in the food and fertiliser sectors between 2008 and 2015, **Ali, 2020** did a study. Financial leverage and combined leverage have been demonstrated to have a significant impact on financial performance as assessed by ROA. On the other hand, operating leverage significantly reduces return on assets. Additionally, ROA's financial success metric does not take business size into account. The financial performance of the EVA is significantly and adversely impacted by the DOL and DFL. A firm's size has a large detrimental impact on performance, whereas DOL, DFL, and DCL have no noticeable impact on Tobin's Q performance. The 2019 study by **Abdullah and Karim** examines the relationships between earnings and changes in the share prices of publicly traded banking companies in Bangladesh. The research is grounded in empirical data. 30 Bangladeshi listed banking companies from 2010 to 2013 served as the study's sample. The study found that RNOA and ROCEs, which are used to assess stability and quality, were strongly impacted by operating and financial leverage. This study also shows that equity valuation and stockholder returns are significantly impacted by leverage. **2018 Subramanyam** examined the impact of financial leverage on Coromandel Packaging Limited's profitability. It is researched at from 1985–1986 through 2013–2014. Regression analysis shows that while not significant, the DOL, DFL, and DTL coefficients are positive with respect to ROCE. The DOL, DFL, and DTL coefficients are positive with respect to ROE but are not statistically significant, despite the total model being statistically significant. It was determined that Coromandel Packaging Limited's operating leverage and total leverage levels are satisfactory. The impact of FL on the financial performance of Turkey's supermarket in the Coast Region was studied by **Ogola & Ali in 2018**. The study is based on first-hand information and a primary survey of 700 persons, of which 255 samples were selected. The financial performance of Kenyan supermarkets was found to be negatively impacted by high leverage firms and negatively impacted by high interest rates. **Mukherjee, Sen, and Dutta (2018)** examined how financial leverage affects firm value. For this study, a sample of 31 NSE-listed companies from various industries was selected. The results show that there is a significant negative correlation between financial leverage and firm value. The focus of **Mochi & Dani's 2018** study with selected firms in the Indian cement sector was on the connection between financial leverage and profitability. As a sample size, the top 10 businesses from 2007–2008 through

2017–2018 have been chosen. In the study, secondary data were used. The study showed that leverage (debt) increased while profitability decreased due to the burden of debt servicing. In another study by **Adetunji, Akinyemi, and Rasheed in 2016** tried to study the relationship between financial leverage's and firm's value and effect on share value. The five firms were chosen to represent those listed between 2007 and 2012 on the Nigerian stock exchange. The data in the study are analysed using conventional least squares techniques. Financial leverage has been found to have a considerable impact on firm value, as well as a significant relationship with firm value. So, when funding long-term enterprises, financial leverage is advantageous than equity. The impact of different debt levels on the share price of listed cement industries on the Pakistan Stock Exchange was studied by **Iqbal, Raza, Farrukh, & Mubeen in 2016**. The study uses purposive sampling and runs from 2005 to 2015. The degree of financial leverage and debt ratio has been found to negatively impact the share price. In contrast, the significant positive impact on the share price has a considerable positive impact, and the Debt to Equity ratio does not influence the share price. From 2007–2008 to 2017–2018, **Hussan (2016)** examined the link between financial leverage and profitability in a sample of the top ten cement manufacturers in India. Due to the burden of debt repayment, it has been found that leverage (debt) increased while profitability decreased

2.2 Review Related To Profitability

The dividend policy served as a facilitator in **Sholichah et al., 2021's** study on the effects of profitability and leverage ratio on stock price. 24 consumer products manufacturing companies were included in the survey's sample. Between 2011 and 2018, the researcher looks at profitability metrics including ROA, ROE, GPM, and NPM as well as statistics on solvability like DAR, LTDER, and DER. Profitability, solvency, and dividend policy have all been shown to have an impact on stock price changes. On the other side, the dividend policy is unaffected by profitability or solvency. The relationship between the profitability ratio, as defined by the net profit margin, return on assets, equity, and stock market price listed bank in Saudi Arabia, has been explored by **Alaagam in 2019**. Panel data unit tests and a panel Granger causality test were utilised to collect secondary sources' data from the bank's annual report for the years 2011 through 2018. To examine the long- and short-term effects of profitability and stock price, the Autoregressive Distributed Lag (ARDL) model is utilised.

The causation finding demonstrates that profitability and stock prices had no causal relationship. While ROA and Stock price have a short-term, favourable relationship, ARDL demonstrates no long-term link between study variables. The impact of profitability ratios (GPM, OPM, NPM, ROA, and ROE), debt policy (DER), and firm size (assets size) on the company value (PER) in consumer goods companies listed on the Indonesia Stock Exchange was studied by **Peranginangin& Nusantara in 2019**. The findings indicated that while OPM, NPM, ROA, and DER had no effect on the firm value, GPM, OPM, ROE, and DER have a considerable impact on PER. The study's findings demonstrate that the profitability ratio has no bearing on the firm's worth as a producer of consumer goods. According to **Saki, Arab, Heidari, and Maghari's 2018** research, there may be a correlation between asset growth and profitability indexes and stock return forecasts for companies listed on the Tehran stock markets. The dependent variable was expected stock return, and the control variables were free cash flows and earnings. 450 companies listed on Tehran stock exchanges between 2009 and 2014 were included in the sample. The study's other three hypotheses are accepted, but the finding that there is an inverse relationship between the book market and the anticipated stock market price is refuted. The study's conclusion that no relationship was found in the TSE suggests that investors there are not sufficiently concerned with the firm's potential for future growth.In **Ngatemin, Maksum, Erlina, and Sirojuzilam (2018)**, the effect of institutional ownership and profitability on firm value is empirically investigated. The study, which was conducted between 2007 and 2014, chose 19 companies from the population-only tourism sector that were listed on the Indonesian stock exchange. According to the study's findings, institutional ownership and profitability have a significant impact on capital structure and firm value, but capital structure has minimal bearing on firm value. Additionally, it is shown that in terms of a company's value, the capital structure is unable to act as a mediator between institutional ownership and profitability. Its profitability on a large scale is unaffected by the intervening variable, a capital structure, though, because of this. In their study from **2018, Rosikah, Prananingrum, Muthalib, Azis, and Rohansyah** examined the impact of ROA, ROE, and EPS on company value. The population consisted of 114 companies that were listed on the Indonesian stock exchange, but the sample size for the years 2006 to 2010 was just 32 companies. In this experiment, deliberate sampling was used. The outcome of the investigation was

determined using primary data and multiple regression analysis. The results of this study show that ROA has a considerable positive impact on company value, ROE has a positive but negligible impact, and EPS has a negative but negligible impact. Using a sample size of 11 companies, **Djazuli, 2017** investigated the effects of DER, ROE, PER, interest rate, and currency on the stock prices of food and beverage companies listed on Indonesian public markets between 2010 and 2014. This study used multiple regression analysis as a quantitative method. The results show that ROE and PER have a favourable influence on stock prices while DER, interest rates, and exchange rates have a negative impact. The question of whether profitability ratios aid investors in maximising returns on stock investments was examined by **Bayrakdaroglu, Mirgen, and Kuyu in 2017.** The association between lagged stock prices of ISE100 businesses and their profitability ratios, such as gross profit margin, operating profit margin, net profit margin, return on asset, and return on equity, was ascertained using panel data regression analysis. Net profit margin and its stock price have been determined to have a positive linear association.42 different companies were utilised by **Avdalovi&Milenkovi (2017)** to illustrate the mix of BelexLine index components across the four years from 2010 to 2014. The impact of various (internal) factors, including firm size, asset return, equity return, stock earnings, book value, price-to-book ratio (PTR), leverage, and stock prices of BelexLine index businesses, is examined in the article. The research results show that the following factors individually contribute to a statistically significant predictor of stock prices: asset size, return on assets, leverage, earnings per share, book value, and price-to-book ratio. The focus of **Jacob, MSi, &Fadli Ali Taslim SE, 2017** is on understanding the relationship between liquidity, activity, and profitability and firm value, with dividend policy serving as an intermediary variable (Indonesia stock exchange). The outcome demonstrates that while liquidity considerably affects the company value through dividend policy with a negative direction, the current ratio positively effects the firm value with respect to Tobin's-Q. While the profitability has a positive impact on the firm value through the dividend policy, the activity ratio has a negative impact on the value of the company. The impact of capital structure and profitability on the stock price of publicly traded manufacturing sector companies listed on the Indonesian stock exchange between 2010 and 2013 was examined by **Purnamawati (2016).** In this quantitative investigation, only 68 industrial enterprises were included

in the sample. The investigation made use of deliberate sampling techniques. The path analysis approach is used to explore the data. According to the findings, capital structure and profitability both have an impact on share price of 4.4%, capital structure positively affects share price by 12.4%, profitability positively affects share price by 16.5%, and capital structure positively affects profitability by 11%.

3. Research Gap

After studying the reviews in this area, the researcher has found that the majority of studies have been done related to the Impact of leverage on financial performance and other areas only a few researchers have a focus on power sector companies. Limited studies have been conducted in the context of Indian listed companies, especially in the field of the Power sector. The researcher has not found any study covering Indian companies in power sector. So the Researcher feels that there is a need to examine these companies. Therefore, there is a need for further research to address this gap and explore the following aspects:

Contextual Factors: The power sector in India is unique due to various factors such as government regulations, subsidies, and the presence of state-owned enterprises. It is essential to examine how these contextual factors influence the impact of leverage on profitability in the Indian power sector. For instance, understanding the effect of government policies and regulations on leverage decisions and their subsequent impact on profitability.

Dynamic Analysis: Most studies on the impact of leverage on profitability in the power sector adopt a cross-sectional approach, analyzing data from a specific time period. There is a need for longitudinal studies that track the financial performance of power companies over time to capture the dynamic nature of leverage and profitability relationships. This would enable a better understanding of how changes in leverage levels impact profitability in the Indian power sector.

Risk Factors: Leverage introduces financial risk to companies, and it is crucial to explore how risk factors, such as interest rate fluctuations, exchange rate risks, and regulatory uncertainties, affect the relationship between leverage and profitability in the Indian power sector. Investigating the risk-return trade-off associated with different levels of leverage would provide valuable insights for power companies and policymakers.

4. Need of the Study

The need for a study on the impact of leverage on profitability in the power sector is evident from the following:

- The power sector is a capital-intensive industry, which means that it requires a significant amount of debt financing. High levels of debt can increase the cost of capital for power sector companies, which can lead to lower profitability
- The power sector is also a cyclical industry, which means that its profitability can fluctuate significantly over time.
- The power sector is subject to a number of risks, including changes in fuel prices, regulatory changes, and weather events.

These factors make the power sector a risky industry, and they can lead to financial distress for companies that have too much debt. This is why power sector companies need to understand the impact of leverage on their profitability. A study on the impact of leverage on profitability in the power sector would provide valuable information for companies in this industry. The results of the study could help companies to make better decisions about their capital structure and financial management. This could lead to improved profitability and financial stability for power sector companies. It can provide a decision-making framework for the government to determine any policy for the benefit of the power sector which will be examined.

5. Research questions framed

1. What are the government schemes and policies regarding the power sector?
2. Is there any impact of Operating Leverage and Financial Leverage on Profitability concerning the power sector companies listed in NSE?
3. Whether the Leverage affects the Profitability of the firms?
4. Which Leverage impacted Profitability more?

6. Objectives of the Study

1. To know the government policies regarding the power sector.
2. To examine the impact of operating leverage on the profitability of the selected

companies of the power sector.

3. To examine the impact of financial leverage on the profitability of the selected companies.

4. To examine the impact of combined leverage on the profitability of the selected companies.

5. To analyse the impact of profitability on the share price of selected listed companies.

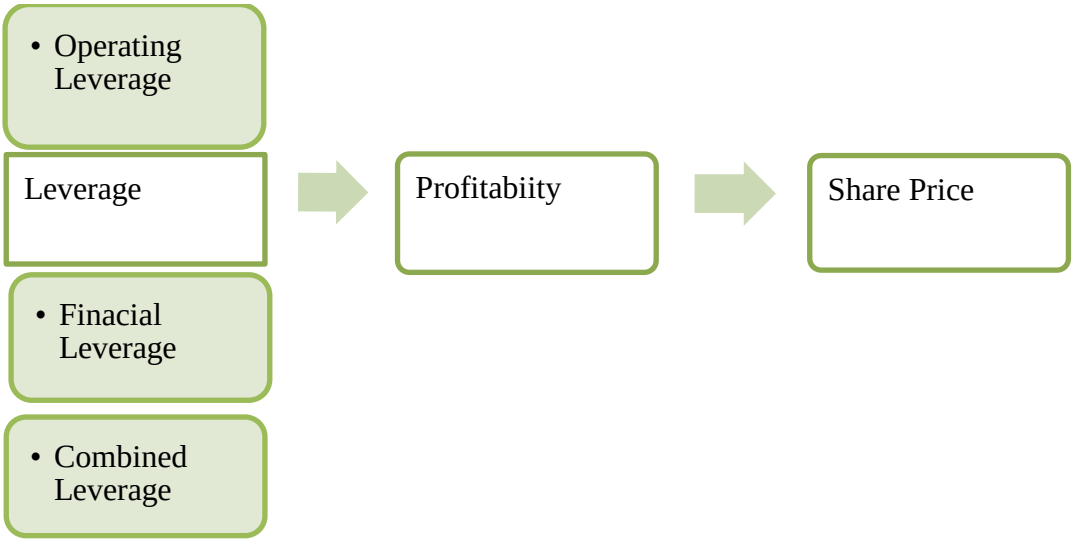

Fig 1: Types of Leverage

6. Hypotheses of the Study

Based on the study model, the following hypotheses are formulated as follows:

6.1 Null Hypotheses H_0

1. H01: There is no effect of operating leverage on the profitability of the selected companies in the power sector.
2. H02: There is no effect of financial leverage on the profitability of the selected companies.
3. H03: There is no effect of combined leverage on the profitability of the selected companies.
4. H04: There is no effect of profitability on the share price.

6.2 Alternative Hypotheses H_1

1. H11: There is an effect of operating leverage on the profitability of the selected companies in the power sector.
2. H12: There is an effect of financial leverage on the profitability of the selected companies.

3. H13: There is an effect of combined leverage on the profitability of the selected companies.
4. H14: There is an effect of profitability on the share price.

7. Research Design & methodology

7.1 Scope of the study

This study covers selected Companies listed in NSE (National Stock Exchange) of power sector. The main focus of the research is to measure the effect of leverage on profitability and its impact on share price.

7.2 Population and Sampling

The companies were selected using a purposive sampling method. Purposive sampling is a type of non-random sampling in which the researcher selects the sample based on specific criteria. In this case, the researcher selected the companies based on the criteria listed above.

The companies are all listed on the National Stock Exchange of India (NSE).

The companies are all active in the power sector.

The companies have a significant market capitalization.

The companies have a long history of financial data available.

7.2.1 Sample size- sample Drawn on the basis of **Market capitalization** of December 2022

The sample size of 10 companies is sufficient for this study. The companies in the sample are representative of the power sector in India. The data from the companies is also reliable and accurate.

Table: 1 List of the Companies

COMPANY	**SYMBOL**
Adani Green Energy Ltd.	**ADANIGREEN**
NLC India Ltd.	**NLCINDIA**
NTPC Ltd.	**NTPC**
Power Grid Corporation of India Ltd.	**POWERGRID**
Adani Power Ltd.	**ADANIPOWER**
Tata Power Co. Ltd.	**TATAPOWER**
NHPC Ltd.	**NHPC**
JSW energy Ltd.	**JSWENERGY**
Torrent Power Ltd.	**TORNTPOWER**
SJVN Ltd.	**SJVN**

Adani Green Energy Ltd.: Adani Green Energy Limited is an Indian renewable energy company headquartered in Ahmedabad, Gujarat. It is owned by Indian conglomerate Adani Group. The company operates Kamuthi Solar Power Project, one of the largest solar photovoltaic plants in the world.

NLC India Ltd.: NLC India Limited is a central public sector undertaking under the administrative control of the Ministry of Coal, Government of India

NTPC Ltd: NTPC Limited, formerly known as National Thermal Power Corporation Limited, is an Indian central public sector undertaking under the ownership of the Ministry of Power, Government of India which is engaged in generation of electricity and allied activities. The headquarters of the psu is situated at New Delhi.

Power Grid Corporation of India Ltd: Power Grid Corporation of India Limited is an Indian central public sector undertaking under the ownership of Ministry of Power, Government of India. It is engaged mainly in transmission of bulk power across different states of India. It is headquartered in Gurugram.

Adani Power Ltd.: Adani Power is an Indian power and energy company which is a part of Adani Group. Based in Khodiyar in Ahmedabad, it is a private thermal power producer, with a capacity of 12,450 MW and operates a mega solar plant of 40 MW at Naliya, Bitta, Kutch, and Gujarat.

Tata Power Co. Ltd: Tata Power Co. limited is an Indian electric company based in Mumbai. It is part of TATA group core business of the company is to generate, transmit and distribute electricity.

NHPC Ltd.: NHPC Limited is an Indian government Company under the ownership of Ministry of Power that was incorporated in the year 1975.

JSW energy Ltd.: JSW Energy Limited is an Indian power company engaged in power generation, transmission and trading. It is part of JSW Group. In 2015, JSW Energy acquired two of Jaypee Group's hydropower plants, with a combined capacity of 1,391 MW, for 9,700 crore.

Torrent Power Ltd.: torrent power is an Indian energy and Power Company in power generation transmission and distribution it was founded in the year 1996 headquarter in ahemedabad Gujrat.

SJVN Ltd.: SJVN, formerly known as Satluj Jal Vidyut Nigam, is an Indian public sector undertaking involved in hydroelectric power generation and transmission. It was incorporated in

1988 as Nathpa Jhakri Power Corporation, a joint venture between Govt. of India and Govt. of Himachal Pradesh.

7.3 Duration of the study

The data will be compiled for these companies from 2010 onwards.

7.4 Source of Data

The data for this research will be collected from annual reports, websites of selected companies and data bases such as money control, screener, and the National Stock Exchange of India (NSE).

7.5 MEASUREMENT OF STUDY VARIABLES

Study variables are quantitative which will be measured by using financial well-known methods. The variables have been identified and more will be added at later stage some are discussed as follows:

DEPENDENT VARIABLE

Share Price: The share price is a key indicator that benefits the company, its shareholders, and investors. It shows the share market's opening, closing, high, and low prices on a daily basis. The price of a share is not fixed, but fluctuates according to market conditions. It will likely increase if the company is perceived to be doing well, or fall if the company isn't meeting expectations.

Averaging high and low market prices is the optimum approach for establishing a share's market price. For calculating share price we will use this approach:

Equation 1: $\boldsymbol{Average\ closing\ price\ \ of\ share\ for\ each\ year}$

closing share price of each month /12

A. INDEPENDENT VARIABLES

1. Financial Leverage To represent financial leverage of companies, researcher will analyse following ratios.

Debt to Total Asset: This ratio is the indicator of a company's financial leverage. It tells about the percentage of a company's total assets that were financed by creditors in simple word it is the total amount of long term debt liabilities divided by total assets .The formula for the study is shown below:

$$\textbf{Debt To total Assets} = \frac{\text{Debt long term loans}}{\text{Total Assets}}$$

Debt to Equity: Debt to equity used to evaluate a company's financial leverage and it is calculated by dividing company's total long term debt liabilities by its equity share holder .The formula for the study is shown below:

$$\textbf{Debt To Equity} = \frac{\text{Debt}}{\text{Shareholder fund}}$$

Total Assets to Equity: The Total Assets to Equity ratio reveals how much of a company's assets are funded by shareholders. A low ratio suggests that a firm was carefully funded, with a major portion of investor capital and a small quantity of debt. A low ratio should be goal but if business has consistent cash flow for a longer period than higher ratio is acceptable.

(Assets to equity ratio,) The following formula is shown below:

$$\textit{Total Assets to Equity} = \frac{\textit{Total Assets}}{\textit{Shareholder fund}}$$

2. Profitability: To represent profitability of companies, we have taken following three ratios.

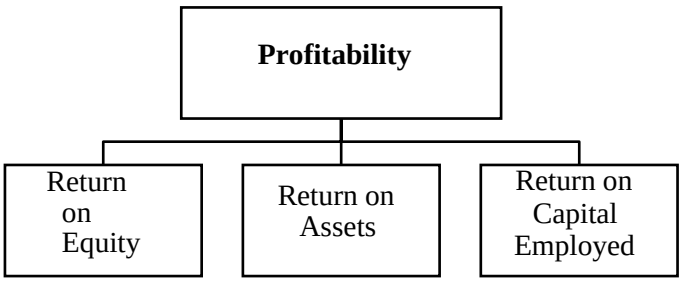

Fig2: Profitability

Return on Equity (ROE): This ratio is the most accurate indicator of a company's earnings potential. In this ratio net income is divided by shareholders equity. It gives a sufficient standard for determining whether or not a company has generated a suitable return for its equity stockholders. The formula for the Return on Equity is as under:

$$\textbf{Return on Equity} = \frac{\textit{Net income}}{\textit{shareholder Equity}}$$

Return on Asset (ROA): "This ratio measures how profitable a company is in relation to its total assets. A higher ROA indicate company is more efficient and productive at managing its balance sheet and lower indicate it needs improvement. Formula for the study is shown below:

$$\textbf{Return on Assets} = \frac{\boldsymbol{Net\ Profit}}{\boldsymbol{Total\ Asset}}$$

Return on Capital Employed (ROCE): The basic goal of every company investment is to generate a sufficient return on investment. Return on capital employed is a financial ratio that measures a company's profitability in terms of all of its capital. Higher ratios tend to indicate that companies are profitable. The formula for ROCE is as follows:

$$\textbf{Return on Assets} = \frac{\boldsymbol{Net\ Profit\ before\ interest\ and\ tax}}{\boldsymbol{capital\ Employed(equity+Debt)}}$$

3. Operating Leverage Operating leverage is the measure of a company's fixed costs compared to its total costs. Fixed costs stay the same each period, and variable costs change as production rates change. The formula for operating leverage is as follows:

$$\textbf{Operating Leverage} = \frac{\boldsymbol{C}}{\boldsymbol{EBIT}}$$

Or

$$\textbf{Operating Leverage} = \frac{\boldsymbol{C}}{\boldsymbol{Operating\ Profit}}$$

7.6 Tools and Techniques

To examine the results for the determined objectives of the study, two techniques will be used to analyse the compiled data.

Descriptive statistics: These statistics will be used to describe the data, such as the mean, median, and standard deviation Variance.

Inferential statistics: These statistics will be used to test the hypotheses of the study, such as the t-test, ANOVA, Correlation analysis, and regression analysis.

Econometric models: These models will be used to predict the impact of leverage on profitability, such as the linear regression model OLS and the panel data model.

Software to be used – E-Views 12.0, Microsoft Excel

7. Objective Wise Research Methodology

For completing this research, the study would be descriptive as well as analytical in nature.To make

the study more meaningful and concise, the necessary data would be collected from relevant sources.

The researcher has designed the following strategies to complete the study:

- Study different Record and Report of the selected companies.
- Analysis of data for concluding.

Table 2: Objective Wise Research Methodology

Objective	Methodology
To know the government policies regarding the power sector	For achieving this objective researcher will collect information from government websites, and policy will be identified.
To examine the impact of operating leverage on the profitability of the selected companies of the power sector.	For achieving this objective, the researcher will collect information from the different officials' websites and reports and analyse the impact of operating leverage on profitability.
To examine the impact of financial leverage on the profitability of the selected companies.	For achieving this objective, the researcher will collect information from the different officials' websites and reports And analyse the impact of financial leverage on profitability.
To examine the impact of combined leverage on the profitability of the selected companies.	For achieving this objective, the researcher will collect information from the different officials' websites and reports and will be carried out the analysis between combined leverage and profitability.
To analyse the impact of profitability on the share price of selected listed companies.	For achieving this objective researcher will collect data from the official website of NSE, Screener Etc. and analyse the Effect on Share price.

8. Outline of the Chapter Plan

Chapter: 1 Introduction

• An Overview financial management, operating, financial and combined leverages Profitability.

Chapter: 2 Review of Literature: This chapter includes the following:

• Review of literature of previous work done on impact of leverage and profitability.

Chapter: 3 Research Methodology: This Chapter includes the following:

• Research Gap and need of study

• Objectives of the Study

• Hypotheses of the Study

• Selection of the Sample

• Variables of the Study

• Statistical Tools to be used for Data Analysis

Chapter: 4 Analysis of through different ratios and tools and graphs:

Chapter: 5 Conclusion and suggestion

References

1. Ali, M. (2020). IMPACT OF LEVERAGE ON FINANCIAL PERFORMANCE EVIDENCE FROM PAKISTAN FOOD AND FERTILIZER SECTOR). *Journal of Critical Reviews, 07*(13), 447-456.

2. Abdullah, B. M., & Karim, Z. (2019, janurary). Operating and financial leverage and their effects on equity valuation. *International Journal of Business and Management Invention (IJBMI), 08*(01), 01-08.

3. Subramanyam, D. (2018). Impact of Financial Leverage on Firm's Profitability: An Investigation from Coromandel Packaging Limited of A.P. International Journal of Scientific Research and Review, 7 (1), 140 to 146.

4. Ogola, B. L., & Ali, D. I. (2018, Augest). "Effect of financial leverage on financial performance of supermarket chains in Kenya: A case study of Tuskey's Super market in cast Region". *International Journals of Academic and Research. 01*(01), 107-121. Retrieved 2020,fromhttps://www.academia.edu/37425465/Effects_of_Financial_Leverage_on_Financial_Performance_of_Supermarket_Chains_in_Kenya_A_Case_Study_of_Tuskys_Supermarkets_in_Coast_Regtion.

5. Mukherjee, T., Sen, D. S., & Dutta, S. R. (2018, July). Impact of Financial Leverage on the Value of Firm: Evidence from Some NSE Listed Companies. *The BESC Journal of Commerce and Management, 4*, 43-52. Retrieved 2020, from http://bjcm.bescollege.net/v4/n1/v4n104.pdf

6. Mochi, R., & Dani, M. (2018). Impact of Levergae on profitabity of selected companies in Indian cement industry. *Bhartiya Bhusha, Skiksha Sahitya evam Shodh, 08*(11), 10-20.

7. Adetunji, A. A., Akinyemi, I. A., & Rasheed, K. O. (2016). "Financial leverage and firm values: A study of selected firms in Nigeria". *European journal of reserach and reflection in management science,, 04*(01), 14-32

8. Iqbal, A., Raza, H., Farrukh, M., & Mubeen, M. (2016). "Impact of leverage on share price: Evidence from Cement sector of pakistan. *Industrial engineering letter. 06*(06), 44-48.

9. Hussan, J. M. (2016). "Impact of leverage on risk of the companies". *journal of civil and legal science*

10. Sholichah, f., asfiah, n., ambarwati, t., jihadi, m., widagdo, b., & ulfa, m. (2021, feburary 16). The Effects of Profitability and Solvability on Stock Prices: Empirical Evidence from Indonesia. *Journal of Asian Finance, Economics and Business, 8*(3), 885-894. doi:10.13106/jafeb.2021

11. Alaagam, A. (2019, July 31). The Relationship between Profitability and Stock Prices: Evidence from the Saudi Banking Sector. *Research Journal of Finance and Accounting, 10*(14), 91-101. Doi:10.7176/RJFA

12. Peranginangin, A. M., & Nusantara, S. S. (2019, october). The Effect of Profitability, Debt Policy and Firm Size on Company Value in Consumer Goods Companies. *Abstract Proceedings* International Scholars Conference, 7(1), 1217-1229. Retrieved from https://doi.org/10.35974/isc.v7i1.1587

13. Saki, N., Arab, M., Heidari, R., & Maghari, A. E. (2018, April). The Relationship of Net Asset Growth and Profitability Index with Stock Returns Evidence from Tehran Stock Exchange. *Pacific Business Review International, 10*(10), 57-68. Retrieved 2020, from http://www.pbr.co.in/2018/2018_month/April/7.pdf

14. Ngatemin, Maksum, A., Erlina, & Sirojuzilam. (2018, May). Effects of institutional ownership and profitability to firm value with the capital structure as intervening variable (empirical study at company tourism industry sector listed in indonesia). *International Journal of Civil Engineering and Technology, 9*(5), 1305-1320. Retrieved 2020, from http://digilib.unimed.ac.id/id/eprint/28347

15. Rosikah, Prananingrum, D. K., Muthalib, D. A., Azis, M. I., & Rohansyah, M. (2018). Effects of Return on Asset, Return on Equity, Earning Per Share on Corporate Value. *The International Journal of Engineering and Science (IJES), 7*(3), 06-14.

16. Djazuli, A. (2017, october). The Relevance of Leverage, Profitability, Market Performance, and Macroeconomic to Stock Price. *EKOBIS – Ekonomi Bisnis, 22*(2), 112-122. doi:10.17977/um042v22i2p112-122

17. Bayrakdaroglu, A., Mirgen, C., & Kuyu, E. (2017, November). RELATIONSHIP BETWEEN PROFITABILITY RATIOS AND STOCK PRICES: AN EMPIRICAL ANALYSIS ON BIST-100.

Istanbul Finance Congress (IFC),6 (1), 1-10. doi:10.17261/Pressacademia.2017.737

18. Avdalović, S. M., & Milenković, I. (2017, June 30). IMPACT OF COMPANY PERFORMANCES ON THE STOCK PRICE: AN EMPIRICAL ANALYSIS ON SELECT COMPANIES IN SERBIA. *Economics of Agriculture, 64*(2), 561-570. doi:https://doi.org/10.5937/ekoPolj1702561M

19. Jacob, J., MSi, S., & Fadli Ali Taslim SE, M. (2017, october). The Impacts of The Ratio of Liquidity, Activity And Profitability Towards Company Value With Dividend Policy As Intervening Variables. *IOSR Journal of Business and Management, 19*(10), 01-07. doi:10.9790/487X-1910040107

20. Purnamawati, G. A. (2016, April). THE EFFECT OF CAPITAL STRUCTURE AND PROFITABILITY ON STOCK PRICE (STUDY OF THE MANUFACTURING SECTOR IN INDONESIA STOCK EXCHANGE). *International Journal of Business, Economics and Law,, 9*(1), 10-16.